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EXAMINER	
BASKAR, PADMAVATHI	

ART UNIT	PAPER NUMBER
1645	

DATE MAILED: 09/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/868,293	RATTI, GIULIO	
	Examiner	Art Unit	
	Padmavathi v Baskar	1645	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 June 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *25-29, 31-35, 37-40, 41, 43-47* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *25-29,31-35,37-41 and 43-47* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 June 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *6/10/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Amendment

1. Applicant's amendment filed on 6/10/04 is acknowledged.

Status of claims

2. Claims 30, 36, 42 and 48 have been canceled.

Claims 25-28, 31-35, 37-40, 43-47 have been amended.

Claims 25-29, 31-35, 37-40, 41, 43-47 are pending in the application.

It is noted that the status of claim 47 has been amended as "new" in the amendment filed on 6/10/04. The status of this claim should be "currently amended". The examiner understands that this is an oversight, as applicants do not yet routinely use the new rules. In order to advance the prosecution, the examiner is considering the status of claim 47 as "currently amended."

Information Disclosure Statement

3. Information Disclosure Statement filed on 6/10/04 has been acknowledged and a signed copy of the same is attached to this office action.

Drawings

4. The newly submitted drawings are accepted by the examiner.

Specification – Informalities withdrawn

5. The examiner acknowledges the amendment made to the specification and therefore, the informalities have been withdrawn.

Claim Rejections - 35 U.S. C. § 112, second paragraph withdrawn

6. In view of the amendment to the claims 27, 35, 39 and 47 and cancellation of claims 30 and 42, the rejection under 35 U.S. C. § 112, second paragraph is withdrawn.

In view of the amendment to the claims 28 and 40, and cancellation of claims 36 and 48, the rejection under 35 U.S. C. § 112, second paragraph is withdrawn.

Claim Rejections - 35 U.S. C. 112, first paragraph maintained

7. The written description rejection of claims 25-29, 31-35, 37-40, 41, 43-47 under 35 U.5.C. 112, first paragraph is maintained as set forth in the previous office action.

The specification describes and identifies *Chlamydia trachomatis* protein L7/L12 from L2 strain. The invention also provides predicted pI and molecular weight of L7/L12 *C.trachomatis* as 5.09 and 13.5 (KD?) respectively in Table IV. This protein has been identified by western blots of two - dimensional electrophoresis, using C.trachomatis proteins obtained from strain L2/343/Bu and chronically infected or convalescent patients sera. Further, the specification teaches spot number 12, N-terminal sequence TTESLETLVE (SEQ.ID.NO: 2) of L7/L12 protein However, The specification fails to teach L7/L12 protein, TTESLETLVE (SEQ.ID.NO: 2) has been shown either treating or preventing any Chlamydia infection. Further, the specification fails to teach homologue of ribosomal protein, L7/L12, homologue that has greater than 50% identity to ribosomal protein, L7/L12, homologue that has greater than 90% identity to ribosomal protein, L7/L12 fragments of ribosomal protein L7/L12 with at least 7 amino acids. None of these broadly cited proteins and methods of treating or preventing Chlamydia infection using such proteins are set forth in this specification. Therefore, the broadly claimed methods do not meet the written description provision of 35 U.S.C. 112, first paragraph. Vas-Cath Inc. v. Mahurkar, 19 USPQ2d 1111, makes clear that "applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention. The invention is, for purposes of the 'written description' inquiry, whatever is now claimed." (See page 1117.) The specification does not "clearly allow persons of ordinary skill in the art to recognize that (he or she] invented what is claimed." (See Vas-Cath at page 1116.).

The specification discloses L7/L12 protein from C.trachomatis, which is partially, characterized having predicted pI and molecular weight 5.09 and 13.5 (KD?) respectively, which corresponds to the protein spot 12 in Tables 2,3 and 4. Thus, an isolated *C.trachomatis* ribosomal protein L7/L12 (SEQ.ID.NO: 2) with predicted pI and molecular weight 5.09 kD and 13.5 kD respectively meets the written description provision of 35 U.S.C. 112, first paragraph for the reasons set forth below.

The specification fails to teach including homologue of ribosomal protein, L7/L12, homologue which has greater than 50% identity to ribosomal protein, L7/L12, homologue which has greater than 90% identity to ribosomal protein, L7/L12 fragments of ribosomal protein L7/L12 with at least 7 amino acids (examiner is viewing these proteins as variants). It is noted that the claimed method of treatment or prevention of Chlamydial infections using broadly claimed ribosomal proteins are not described adequately. The amount of disclosure necessary to satisfy the written description requirement for utilizing the disclosed protein either in treating C.trachomatis infected individual or preventing the C.trachomatis infection is not well established. Further, none of the claimed variants have been disclosed in such a way that one skilled in the art will be able to reasonable predict the outcome of the claimed methods. There is no written description support for a method of treating or preventing Chlamydial infection as claimed. Adequate written description requires more than a mere statement that it is part of the invention and reference to a potential method. See Fiers v. Revel, 25 U5PQ2d 1601, 1606

(CAFC 1993) and Amgen Inc V Chugai Pharmaceutical Co Ltd., 18 U5PQ2d 1016. One cannot describe what one has not conceived. See Fiddes v. Baird, 30 U5PQ2d 1481, 1483. In Fiddes v. Baird, claims directed to mammalian FGF's were found unpatentable due to lack of written description for the broad class.

8. The enablement rejection of claims 25-29, 31-35, 37-40, 41, 43-47 under 35 U.5.C. 112, first paragraph is maintained as set forth in the previous office action.

The nature of the invention is a method of treatment and a method of preventing Chlamydia infection comprising administering to a patient a therapeutic effective amount of ribosomal protein L7/L12.

It is noted that the specification fails to teach ribosomal proteins as claimed could be used either for treating or for preventing *C.trachomatis* infection in a patient. The specification does not teach administration of C.trachomatis ribosomal protein L7/L12 (SEQ.ID.NO: 2) to a patient is able to treat an ongoing infection. Further, homologue of ribosomal protein, L7/L12, homologue which has greater than 50% identity to ribosomal protein, L7/L12, homologue which has greater than 90% identity to ribosomal protein, L7/L12 fragments of ribosomal protein L7/L12 with at least 7 amino acids (examiner is considering them as variants) have been shown to induce a protective immune response so that this protein could be used in a method of treatment or prevention. The specification does not provide how would an artisan have used the protein and its variants to treat the infection against *C.trachomatis*. Furthermore, the patient's sera has not been shown to identify the claimed variants in an in vitro assay. The specifications does not ensure that the protein, L7//L12 or its variants would be able to successfully generate a protective immune response to treat or prevent an infection because the state of the art suggests that the protective immune response to infection with Chlamydia trachomatis is associated with antibody reactivity to species specific, serovar specific and serogroup specific determinants on the major outer membrane proteins (see Allen et al, Journal of Immunology 1991, 147; 674-679 and Batteiger et al 1996, Infection and Immunity , 64; 2839 - 2841). Therefore, the protective role of antibodies to ribosomal protein L7/L12 of C.trachomatis is yet to be experimented. . Further, the specification provides no working examples demonstrating (i.e., guidance) enablement for any *in vivo* method of using the claimed protein or variants thereof. However, it is unclear whether this approach is feasible in the treatment of Chlamydial infections using the claimed protein because the target antigen, a ribosomal protein L7/L12, SEQ.ID.NO: 2 has not been shown to treat even an ongoing Chlamydia trachomatis infection. Thus, this method of treatment or prevention of Chlamydial infection using said ribosomal protein, L7/L12 or variants in the treatment of any and all Chlamydial infections (including infection caused by C.pneumoniae or C.trachomatis) must be considered highly unpredictable, requiring a specific demonstration of efficacy of the claimed protein, L7/L12 in treating specific Chlamydia infection. Absent such demonstration, the invention would require undue experimentation to practice the claimed invention. Therefore, it is concluded that the specification as filed is not enabling for the claimed invention as filed and an artisan would not have been able to practice the invention without undue experimentation.

Applicant's arguments filed on 6/10/04 have been fully considered but they are not deemed to be persuasive.

Applicant states that an analysis of whether a claim is enabled by the specification requires a determination of whether the specification contains sufficient information, together with knowledge in the prior art, to enable one skilled in the art to make and use the claimed invention without undue experimentation. The test of enablement is whether one reasonably skilled in the art could make or use the invention from the disclosure in the patent coupled with information known in the art without undue experimentation. Applicant also states that the disclosure contains adequate written description for ribosomal protein, homologues, fragments, and for the treatment or prevention of Chlamydia infection and cites case laws in support of his arguments.

As cited by the applicant, the examiner has reviewed the disclosure and disagrees with the applicant for the following reasons:

The specification fails to disclose an enabling disclosure for the claimed invention. The present specification does not disclose the structure of the claimed homologue of ribosomal protein or L7/L12, homologue which has greater than 50% identity to ribosomal protein or L7/L12, homologue which has greater than 90% identity to ribosomal protein or L7/L12 fragments of ribosomal protein L7/L12 with at least 7 amino acids (examiner is viewing these proteins as variants). In addition, there is no correlation between structure and function of the broadly claimed homologues or fragments. In the absence of evidence to the contrary, the specification does not contain sufficient disclosure to enable a person skilled in the art could make or use the invention as claimed because the structure of the broadly claimed variants is not disclosed. Further, using such unknown variants is not conventional in the art of treating or preventing C.trachomatis infections.

All the above factors have been considered in view of the level of skill and the knowledge in the art and in light of and consistent with the written description and is determined that one of skill in the art would not recognize from the disclosure that applicant was in possession of the claimed invention. Absent such demonstration, the invention would require undue experimentation to practice as claimed.

Applicant states that

1. Chlamydia ribosomal protein L7/L12 is an immunogenic protein. Seven patients showed reactivity to this (ribosomal protein L7/L12) protein, demonstrating that it is immunogenic in humans as a consequence of Chlamydial infection " Page 12, lines 10-12. 1

2. The applicant reports actual usage and teaches immune sera tested were positive for Chlamydial ribosomal protein L7/L12 and patient immune reactions were also detected against the following proteins: . . . spot 12 - ribosomal protein L7/L12 (7/17)." Page 8, lines 19-22.

3. Third, applicants teach that newly identified Chlamydia immunogens, like the Chlamydial ribosomal L7/L12 protein, belong to conserved families of bacterial proteins. (I) t is noteworthy that several of these new immunoreactive antigens belong to conserved families of bacterial proteins'. seven sera (41%) recognized spot 12 (the ribosomal protein L7/L12)." Page 12, line 27 to page 13, line 1.

The examiner clearly understands that the 3 points raised by the applicant and would like to point to the applicant that the ribosomal protein L7/L12, SEQ.ID.NO: 2 is immunogenic,

however, applicant is not claiming a method of inducing an immune response but claiming a method of treatment or prevention of a Chlamydia infection. Further, all immunogenic proteins may not induce a protective antibody that would be useful for preventing or treating an ongoing infection because as applicant stated that the sera obtained by infected individuals reacted to the protein but the patient is not free of infection. Applicant has not provided any evidence that the antisera raised against the claimed protein or variants are able to suppress or prevent C.trachomatis infection. Since because the immunogen belongs to a conserved family of bacterial protein, it does not mean that the antibodies to such antigens are protective. As stated previously the examiner indicated that the specification does not ensure that the protein, L7//L12 or its variants would be able to successfully generate a protective immune response to treat or prevent an infection because the state of the art suggests that the protective immune response to infection with Chlamydia trachomatis is associated with antibody reactivity to species specific, serovar specific and serogroup specific determinants on the major outer membrane proteins (see Allen et al, Journal of Immunology 1991, 147; 674-679 and Batteiger et al 1996, Infection and Immunity , 64; 2839 - 2841). Therefore, the protective role of antibodies to ribosomal protein L7/L12 is yet to be experimented. Further, immune response generated by ribosomal protein, L7/L12 would be able to treat any and all Chlamydia infections as claimed is also left for experimentation.

New rejection based on the amendment

Claim Rejections - 35 U.S. C. § 112, second paragraph

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

10. Claims 25-29, 31-35, 37-40, 41, and 43-47 are rejected under 35 U.5.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 25 and 37 are indefinite and vague in reciting "Chlamydia ribosomal protein L7/L12". The relative term "L7/L12" in claims renders the claim indefinite. It appears that "L7 and L12" is a lab designation for this protein. Since this is merely a lab designation, such terminology change from lab to lab or the same designation can be used for totally different protein. Therefore, recitation of "L7/L12" must be identified by protein characteristics such as amino acid sequence, molecular weight determined by SDS-PAGE/ Native gel chromatography under reducing or non-reducing conditions, and pl etc.

Claims 25 and 37 are indefinite because they contain the abbreviation " L7/L12". Full terminology should be in each instance in the claims without the additional use of redundant abbreviations in parentheses when used for the first time. Correction is required.

Claims 27, 35, 39 and 47 are vague and indefinite in the recitation of " MW of about 15.8 kD". In consideration of the discrepancies often encountered in the art between protein molecular weights when determined by different methods, whenever a molecular weight is recited to characterize a protein the claim should include not only the method by which it was determined, e.g. whether by sodium dodecyl sulphate polyacrylamide gel electrophoresis, gel filtration or some other method, but also whether the determination was made under denaturing or non-denaturing conditions and whether reducing or non-reducing conditions were used.

Objections

11. Claim 37, line 2, prophylatically is misspelled and should be "prophylactically"

Claims 25 and 37 are objected for improper markush claim language " a fragment of ribosomal protein L7/L12." It should be " a fragment of Chlamydia ribosomal protein L7/L12."

Remarks

12. No claims are allowed.

Conclusion

13. **THIS ACTION IS MADE FINAL**. See MPEP ' 706.07(a). Applicant is reminded of the extension of time policy as set forth n 37 CFR 1.136(a).

A shortened statutory period for response to this final action is set to expire THREE MONTHS from the date of this action. In the event a first response is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event will the statutory period for response expire later than SIX MONTHS from the date of this final action

14. Papers related to this application may be submitted to Group 1600, AU 1645 by facsimile transmission. Papers should be transmitted via the PTO Fax Center, which receives transmissions 24 hours a day and 7 days a week. The transmission of such papers by facsimile must conform with the notice published in the Official Gazette, 1096 OG 30, November 15, 1989. The RightFax number for submission of before final amendments is (703) 872-9306. The RightFax number for submission of after final amendments is (703) 872-9307.

15. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Padma Baskar Ph.D., whose telephone number is ((571) 272-0853. A message may be left on the Examiner's voice mail system. The Examiner can normally be reached on Monday to Friday from 6.30 a.m. to 4.00 p.m. except First Friday of the biweek.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynette Smith can be reached on (571) 272-0864. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose Telephone number is (571) 272-1600.

16. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PMR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PMR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PMR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Padma Baskar Ph.D

MARK NAVARRO
PRIMARY EXAMINER